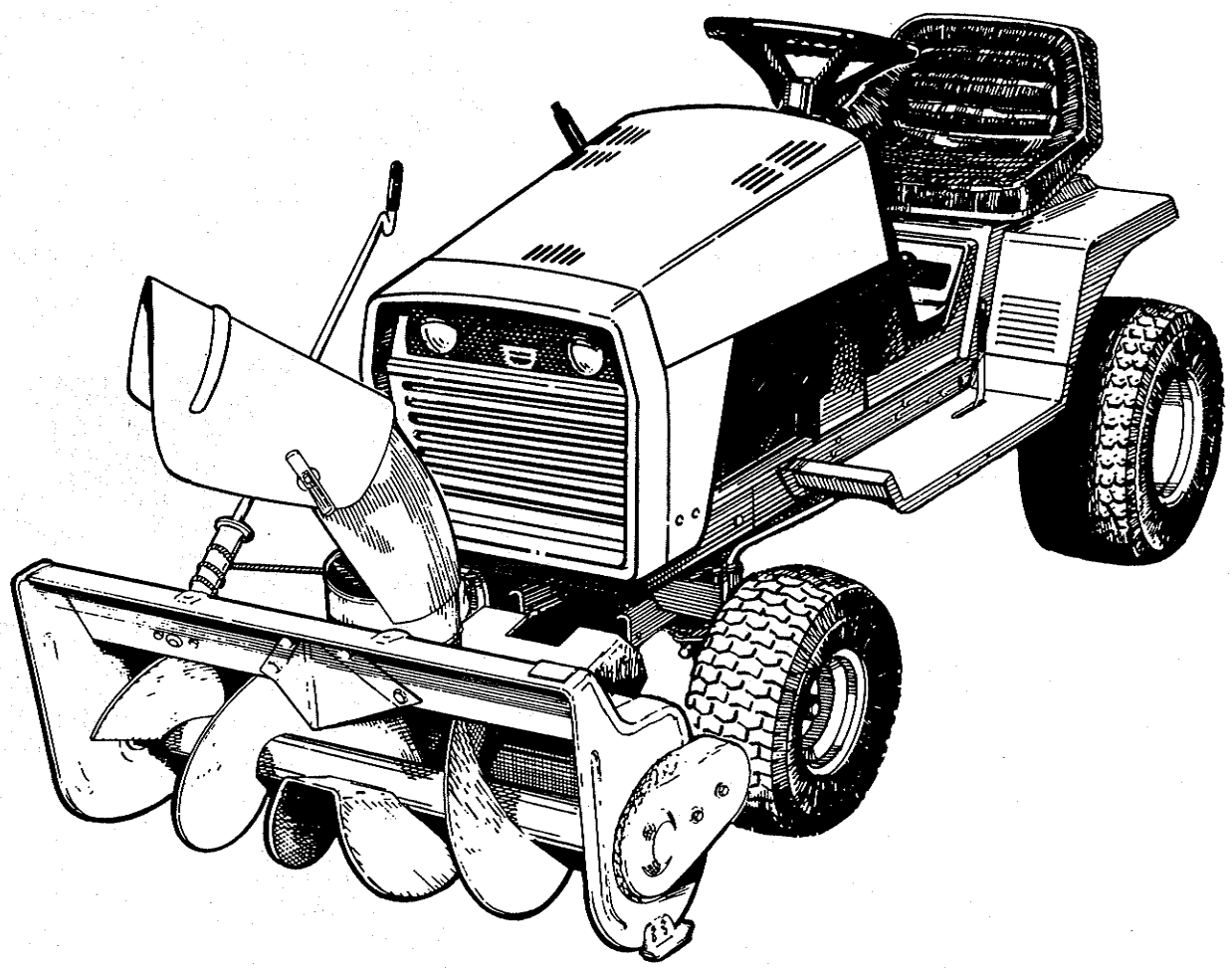
OPERATOR'S MANUAL

36" & 42" SNOW THROWERS



36" SNOW THROWER
MFG. NO. 1690403

42" SNOW THROWER
MFG. NO. 1690513

FORM — 1665232-02
PRINTED IN U.S.A.
798

Contents

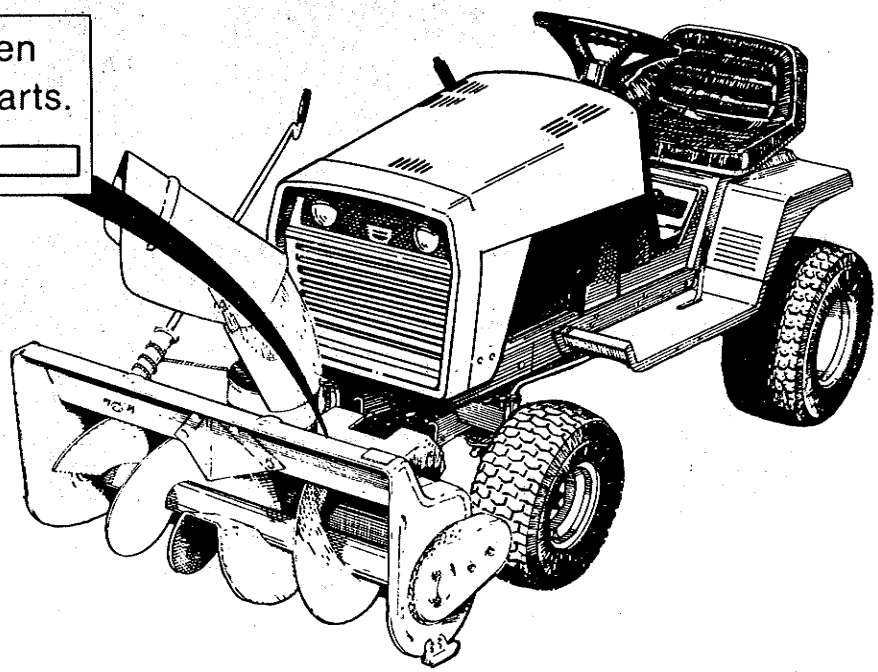
IDENTIFICATION ..... Inside Front Cover
ACCESSORIES ..... Inside Front Cover
SAFETY RULES 1
INSTALLATION & REMOVAL 2
OPERATION 3
NORMAL CARE 4
TROUBLESHOOTING & BELT REPLACEMENT 6
ADJUSTMENT 7
ASSEMBLY 9
SPECIFICATIONS ..... Inside Back Cover

Identification

When ordering replacement parts, give your dealer the identification number found on the identification plate shown below. We suggest you record the number here for easy reference.

Refer to ID no. when writing or ordering parts.

ID NO. _____



Accessories

Tire chains and one wheel weight for each rear wheel are recommended. These accessories will improve traction, thereby making the snow thrower more efficient.

For operation on slopes greater than 15 percent (8.5 degrees) **one wheel weight on each rear wheel and tire chains are required.**

A lift lever (see Operation section) is required (may already be on tractor).

A Winterizing Kit is recommended to prevent carburetor freezing.

See your dealer to purchase any accessory.

Safety Rules

Read these safety rules and follow them closely. Failure to obey these rules could result in loss of control of vehicle, severe personal injury to yourself or bystanders, or damage to property or equipment. The triangle ⚠ in the text signifies important cautions or warnings which must be followed.

⚠ ALL WARNING, CAUTION, and instructional messages on this attachment and on your tractor should be carefully read and obeyed. Personal bodily injury can result when these instructions are not followed.

GENERAL

- Read this manual and the tractor Operator's manual carefully. Be thoroughly familiar with the controls and the proper use of the equipment.
- Never allow children to operate the machine. Do not allow adults to operate it without proper instruction.
- Do not carry passengers.
- Use only attachments or accessories designed for your machine. See your dealer for a complete list of recommended attachments or accessories.
- Keep the area of operation clear of all persons, particularly small children, and pets.
- Never direct discharge toward bystanders.
- Make sure:
  a. all nuts and screws are tight and snow thrower is in good operating condition,
  b. all safety devices and shields are in good working condition, and
  c. all adjustments are correct.

PREPARATION

- Never attempt to make any adjustments while engine is running.
- Thoroughly inspect the area where the snow thrower is to be used and remove all door mats, sleds, boards, wires and other foreign objects.
- Adjust skid shoe height to clear gravel or crushed rock surface.

OPERATION

- Always clear snow up and down the face of slopes, and never across the face. Exercise extreme caution when changing direction on slopes. Do not attempt to clear steep slopes.
- Exercise extreme caution when operting on or crossing gravel drives, walks, or roads. Stay alert for hidden hazards or traffic.
- After striking an object or if unit starts to vibrate abnormally, stop the engine, disengage PTO, and remove the key. Check for the cause and any damage before restarting. Before inspecting make sure all moving parts have stopped.
- Take all possible precautions before leaving operator's position. Disengage the power take-off, lower the attachment, shift into neutral, set the parking brake, stop the engine, and remove the key.
- Never operate snow thrower near glass enclosures, automobiles, window wells, drop-offs, etc., without proper adjustment of snow discharge angle.
- Do not overload machine capacity by attempting to clear snow at too fast a rate.
- Never operate machine at high transport speeds on slippery surfaces. Use care when backing.
- Disengage power to snow thrower when transporting or not in use.
- Never operate the snow thrower without good visibility or light. Always be sure your feet are properly placed on the foot rests and keep a firm hold on the steering wheel.

Installation & Removal

INSTALLATION

1. Slide the snow thrower hitch underneath the front of the tractor. Mounting points are shown in figure 16, page 10. Lift the hitch and slide the mounting bracket onto the shaft that extends forward from axle (figure 1).

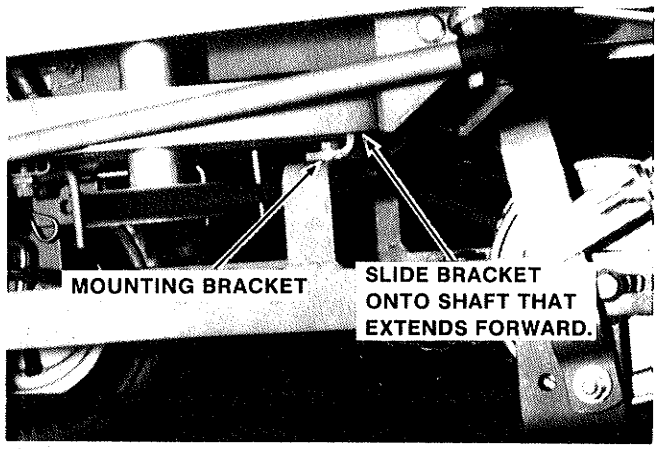


Figure 1. Snow Thrower Hitch

2. Attach the snow thrower hitch to the tractor hitch with four pins and four spring clips. Install spring clips on the inside. Use the front and third holes of the tractor hitch as shown in figure 2.

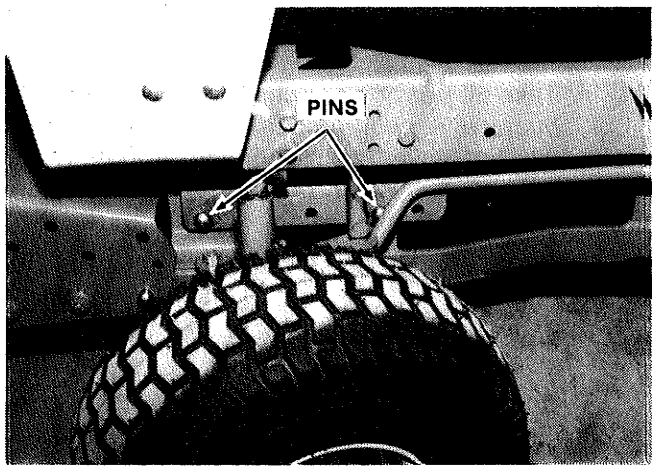


Figure 2. Attaching Hitch

3. Install the belt on the PTO pulley (loosen belt stops as necessary). Figure 3 shows belt installed. Be sure "V" side of belt rides in PTO pulley. The belt pattern is shown in figure 19. Be sure the right side of belt goes between the two legs of the right belt stop.
4. Attach the PTO rod to the tractor PTO lever (hole marked "ST") with spring clip. See figure 3.

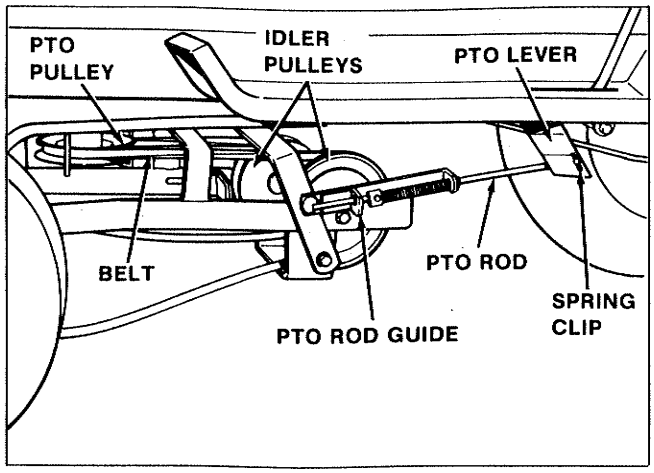


Figure 3. Install PTO Rod & Belt

5. Place tractor lift lever fully forward. Attach the lift lever rod to the tractor lift lever with a spring clip (figure 4). Attach the rod guide to the snow thrower lift arm with a spring clip.
6. Position the front set collar so there is one inch between the rod guide and the set collar. Position the rear set collar against the spring. Check all adjustments.

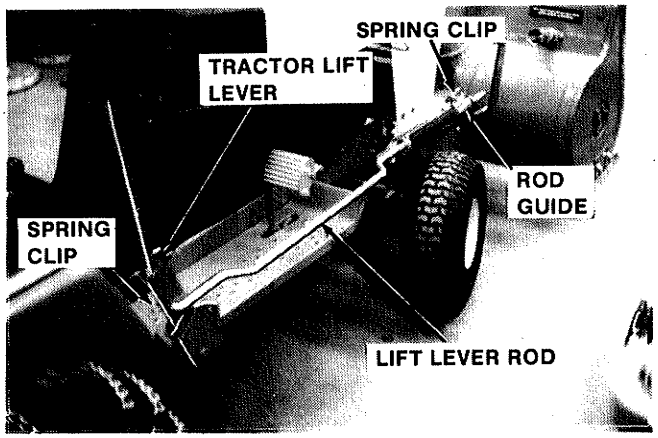


Figure 4. Install Lift Rod

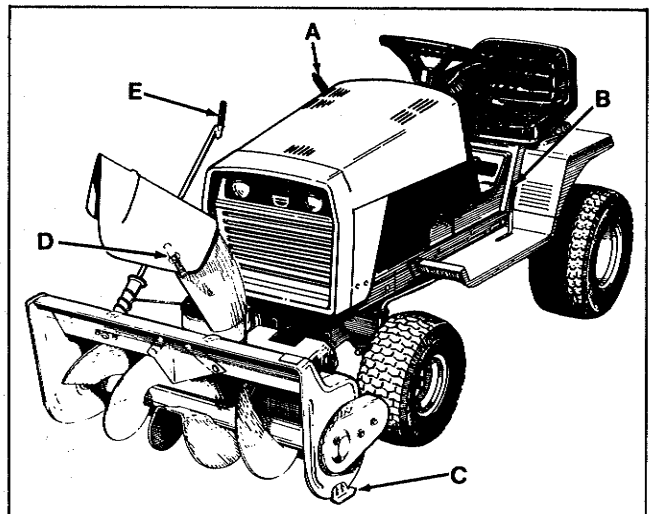
REMOVAL

1. Disconnect the lift rod from the tractor lift lever by removing one spring clip (figure 4). Store the spring clip in the lift rod.
2. Disconnect the PTO rod from the tractor PTO lever by removing one spring clip (figure 3). Store the spring clip in the PTO rod.
3. Remove belt from tractor PTO pulley (figure 3). Loosen belt stops if necessary.
4. Disconnect the hitch by removing four pins and spring clips. Slide the snow thrower forward so the mounting bracket slides off the shaft (figure 1). Store the pins and spring clips in the snow thrower hitch.

Operation

CONTROLS

Figure 5 shows the locations, names, and operation of the snow thrower controls.



Item	Name	Operation
A	Lift Lever	To raise snow thrower, press button (on top), pull lever back, and release button. To lower, press button & allow lever to go forward slowly.
B	PTO Lever	To engage the PTO, push the lever forward. To disengage the PTO, pull the lever back.
C	Skid Shoes	Adjust to control scraper bar height (see Skid Shoe Adjustment).
D	Wing Nuts	Loosen wing nut on each side to adjust deflector height (see Deflector adjust.)
E	Spout Control	Rotate either way to change direction of snow discharge.

Figure 5. Controls

CHECKS BEFORE STARTING

1. Refer to the Normal Care section and perform any needed care. Also, refer to the tractor operator's manual Normal Care section to perform any needed care and to make sure it is prepared for winter use.
2. Remove any objects which might be caught in or thrown by the auger.
3. Clear the auger of any ice particles which may cause damage to auger.
4. Adjust the deflector to desired height (see Deflector Adjustment). (Page 8.)
5. Make sure all screws, nuts, and pins are present and secure.
6. Adjust the skid shoes to desired height (see Skid Shoe Adjustment). (Page 8.)

TRANSPORTING

Disengage the PTO and raise the snow thrower. Adjust ground speed according to road conditions.

ENGINE SPEED & GEAR SELECTION

Normally, first gear is best for throwing snow. Set engine speed from 3/4 to full speed.

OPERATION ON SLOPES

Never operate on slopes greater than 30 percent (16.7 degrees), which is a rise of three feet (91 cm) in ten feet (305 cm) forward.

Always operate up and down the face of slopes, and never across the face. Use a slow ground speed on slopes.

See Accessories (inside front cover) for required accessories on slopes.

STARTING & STOPPING

To start throwing snow, lower the snow thrower. Engage the PTO. Release the clutch-brake pedal to move into the snow.

To stop the tractor, press in the clutch-brake pedal. To stop the snow thrower, disengage the PTO.

SNOW REMOVAL SUGGESTIONS

⚠ CAUTION

Always raise the snow thrower before turning or backing to prevent damage to it.

Determine the best snow removal pattern before beginning. Wind direction is an important factor to consider. Rotate the spout to discharge snow downwind. Plan the pattern so that you avoid throwing snow on cleared areas and on yourself as you're operating.

When land contour permits, it is best to travel in the longest direction to minimize turning.

⚠ WARNING

If the auger stalls or the chute plugs, DISENGAGE THE PTO, STOP THE ENGINE AND REMOVE THE KEY. SET THE PARKING BRAKE. Remove the foreign object or clear the spout before restarting engine.

In very deep or heavy snow, it may be necessary to make the first pass with snow thrower partially raised, backing up every few feet to clear the snow left on the surface. Also, it may be necessary to slice off less than the full width of the auger or to reduce ground speed. If the snow stops flowing freely from the spout, use reverse to back away until snow thrower clears itself.

Normal Care

SCHEDULE FOR NORMAL CARE

A schedule for normal care is provided in the following chart.

Care Required	Schedule
Clean snow and ice from snow thrower.	After Each Use.
Lubricate snow thrower.	Every ten hours or at least once a year.
Inspect, adjust, and lubricate drive chain.	Once a year or more often under frequent use.

Normal Care Chart

LUBRICATE SNOW THROWER

1. Apply a thin film of grease or a few drops of oil to:
   a. PTO Rod Guide (shown in figure 3);
   b. PTO Rod Ends;
   c. Spout Rotating Surface(shown in figure 7); and
   d. Hitch Mounting Pins.

2. Lubricate drive shaft and auger shaft as shown in figure 7.

INSPECT, ADJUST, & LUBRICATE DRIVE CHAIN

1. Remove the chain guard (G, figure 6) by removing two nuts (F).

2. Check the chain (E) for wear or damage. Replace chain if worn or broken.

3. There should be no slack in the chain and the sprockets (J and K) should be aligned. The drive shaft housing (I) should be parallel with the auger housing. To adjust, proceed as follows:

   a. Loosen the four screws (B and H).

   b. Pull rearward on the housing (I) evenly until all slack is removed from chain. With housing parallel to auger housing and sprockets aligned, retighten the four screws (B and H) securely.

4. Spread a coat of grease on the chain, working the grease into the links.

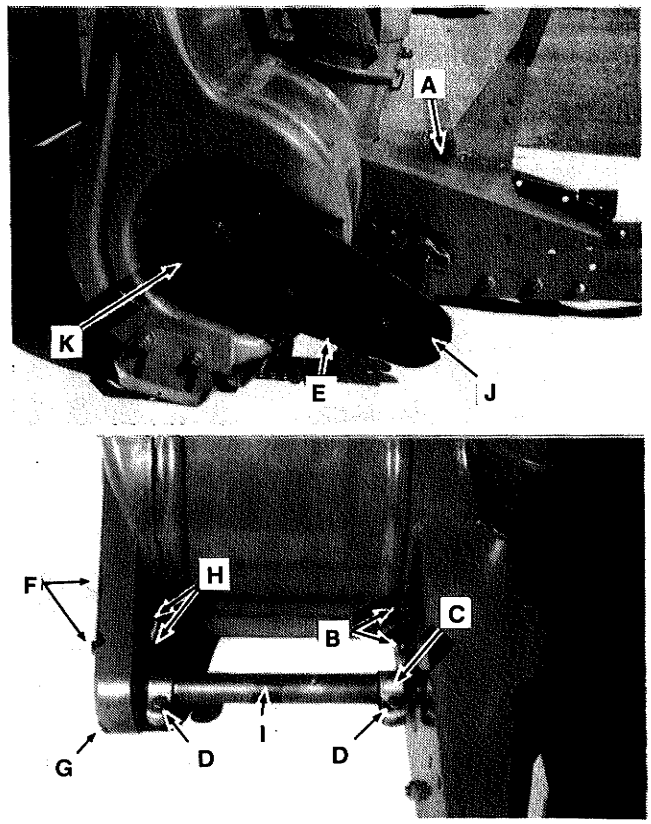


Figure 6. Drive Chain

A. Capscrew, Belt Stop
B. Screw
C. Clamp
D. Screw
E. Chain
F. Nut, Lock
G. Chain Guard
H. Screw
I. Housing, Drive Shaft
J. Sprocket, Drive Shaft
K. Sprocket, Auger

5. Reinstall the chain guard and two nuts.

OFF-SEASON STORAGE

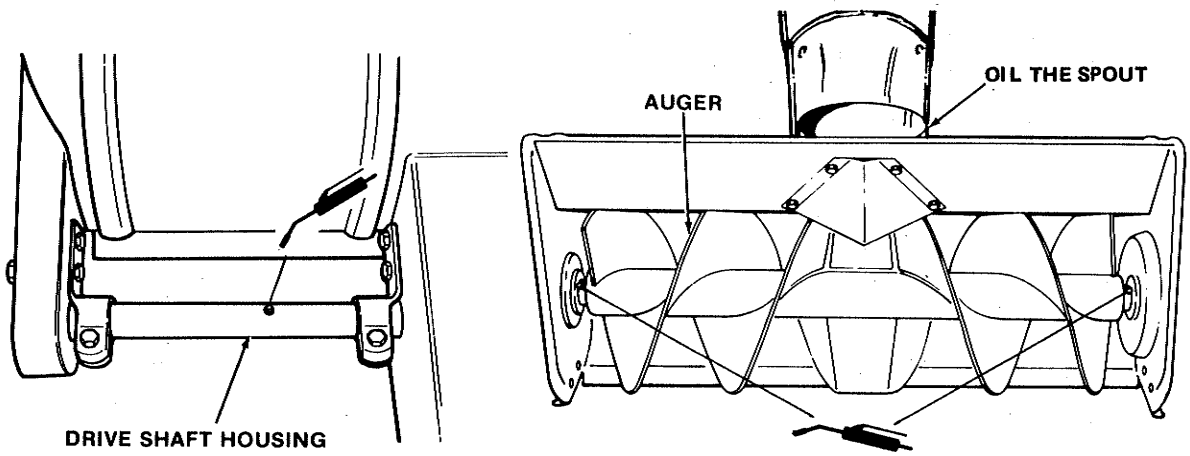
1. Remove the snow thrower from the tractor.

2. Use water pressure or a brush to thoroughly clean the housing.

3. Paint or lightly coat with oil any area where paint has been worn or chipped away.

4. Lubricate the snow thrower.

5. To save space, the hitch can be removed from the snow thrower by removing two pins and spring clips and by removing the belt from the hitch.



Symbol	Use	Apply With	Procedure
	Lithium base automotive grease	Grease Gun	1. Wipe fitting clean with rag. 2. Apply 2 or 3 shots of grease or until grease is forced out. 3. Wipe up any excess grease.

Figure 7. Lubricate Drive Shaft & Auger Shaft

Troubleshooting & Belt Replacement

⚠ WARNING

To avoid serious injury, perform maintenance on the tractor or snow thrower only when the engine is stopped. Always remove the ignition key before beginning the maintenance to prevent accidental starting of the engine.

TROUBLESHOOTING

Locate the problem you've encountered in the Troubleshooting Chart. Check the possible causes one at a time in the order listed. Correct any problems that are found and operate the snow thrower to see if you have eliminated the problem.

BELT REPLACEMENT

1. Remove the snow thrower from the tractor.
2. Remove the belt from the idler pulleys (remove belt guides).
3. Loosen the clamp on the snow thrower pulley belt guard (inside housing).
4. Remove the capscrew which secures the belt guard to the housing. See figure 13. Notice that the belt guard has two mounting holes on top. When reinstalling, be sure to install capscrew in original hole.
5. Slide the belt guard onto the drive shaft housing so the belt can be removed.
6. Install the new belt and reverse the above procedure. When reinstalling the snowthrower pulley belt guard, be sure there is running clearance between the guard and the pulley.

Problem		Cause/Remedy
1. Snow thrower auger does not rotate.	**A.**	PTO Lever not engaged. Engage PTO lever. See Operation section.
	B.	Foreign material blocking auger. STOP engine. Remove key. Unplug auger.
	C.	Snow thrower drive belt slipping. Adjust drive belt tension. See Adjustments section.
	D.	Drive chain broken. Replace parts as necessary.
2. Auger rotates, but snow not thrown far enough.	**A.**	Engine RPM too slow. Operate engine at 3/4 - full throttle.
	B.	Ground speed too fast. Use low gear.
	C.	Snow thrower discharge spout clogged. STOP engine. Remove key. Unplug discharge spout.
3. Scraper bar does not clean down to hard surface.		Skid shoes not properly adjusted. Adjust skid shoes. See Adjustments section.
4. Snow thrower picks up and throws stones on gravel drive.	**A.**	Skid shoes not properly adjusted for gravel surface. Adjust skid shoes. See Adjustments section.
	B.	Too much down pressure on snow thrower. Use the tractor lift lever to raise the snow thrower slightly. See Operation section.
5. Tractor does not have sufficient traction.		Tractor too light at rear wheels. Use rear wheel weights and tire chains. See Accessories.
6. Tractor not stable on sloping surfaces.	**A.**	Ground speed too fast. Reduce ground speed.
	B.	Tractor not properly weighted. Use rear wheel weights and tire chains. See Accessories.
	C.	Tire pressure incorrect. Inflate tires according to tractor operator's manual.
7. Auger does not stop with PTO is disengaed.	**A.**	Brake not properly adjusted. Adjust brake. See Adjustments section.
	B.	Belt tension not properly adjusted. Adjust belt tension. See Adjustments section.
	C.	Belt stops not properly adjusted. Adjust PTO pulley belt stops. See Adjustments section.

Adjustments

WARNING

Before performing adjustments stop the engine and remove the key. Place tractor and snow thrower on a level surface. Engage the vehicle parking brake.

BELT TENSION ADJUSTMENT

1. Engage the PTO.
2. Check the two measurements shown in figure 8. There should be 1-3/8" (35 mm) between set collar and rod guide. The pivot bracket should be 3/4 to 1" (19 to 25 mm) ahead of vertical. Both of these measurements must be correct for proper adjustment.
3. To adjust the PTO rod, disengage the PTO. Loosen the setscrew in the set collar. Move the PTO rod forward to increase gap or back to decrease gap. Retighten the setscrew. Engage the PTO and recheck both measurements.
4. To adjust the pivot bracket, disengage the PTO and loosen the capscrew which secures the "V" pulley in the slot. Moving the pulley forward or back in the slot will change the pivot bracket position. Retighten the capscrew. Engage the PTO and check both measurements.
5. Repeat adjustment until both measurements in figure 8 are attained when the PTO is engaged.

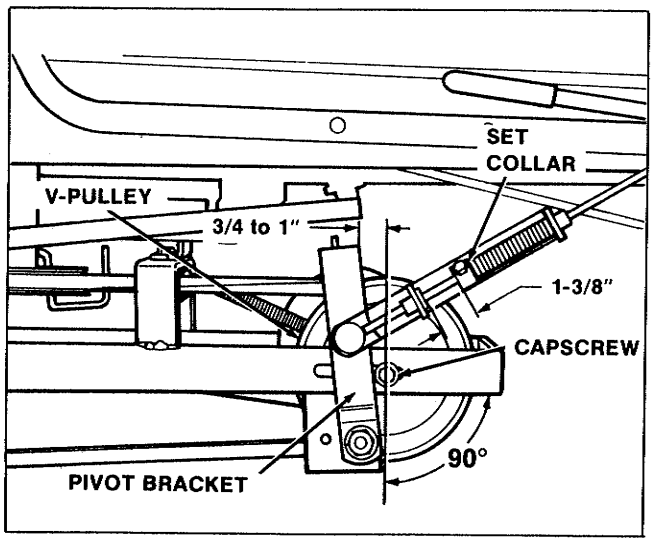


Figure 8. PTO Adjustment

6. Disengage the PTO and start the tractor engine. Engage the PTO and run the snow thrower under no load for five minutes to seat the belt. Stop the engine. Recheck both measurements with PTO engaged.

SNOW THROWER BRAKE ADJUSTMENT

1. With the PTO engaged (lever down) measure the gap between the brake pad and the idler pulley. See figure 9. If it measures 1 inch (25 mm) adjustment is correct. If not, proceed as follows.

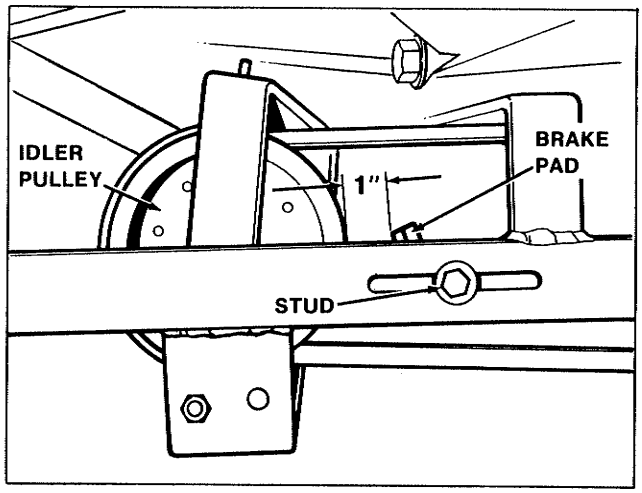


Figure 9. Brake Adjustment

2. Loosen the stud securing the brake pad. Move the brake pad forward or back until there is a one inch gap between pad and edge of idler pulley. Tighten the stud, making sure the brake pad is aligned so that maximum brake pad surface contacts the pulley.
3. Disengage the PTO and start the tractor engine. Raise the snow thrower. The snow thrower belt should not turn. If it does, stop the engine and move the brake pad farther away from the pulley. Recheck for belt movement.

PTO PULLEY BELT STOP ADJUSTMENT

1. With the PTO engaged, measure the gap between each PTO pulley belt stop and flat side of belt (figure 10). The gap should be 1/16 inch (1.5 mm). If not, adjust as follows.
2. Loosen the capscrew holding the belt stop and move it to obtain a 1/16 inch gap. Hold the belt stop in place and tighten the capscrew.

3. Recheck the measurements (PTO engaged).

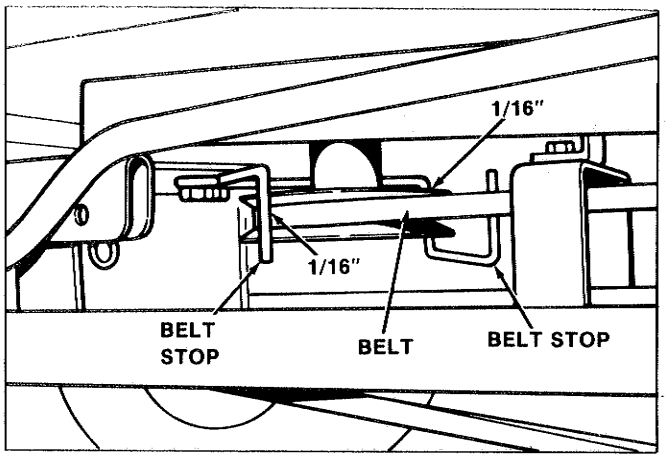


Figure 10. PTO Pulley Belt Stops

SKID SHOE ADJUSTMENT

On a smooth, hard surface such as concrete or asphalt, adjust the skid shoes so that the scraper bar rests on the surface. On a rough surface, such as gravel, adjust the skid shoes so that the scraper bar rides slightly above the surface and does not pick up debris.

To adjust, rest each side of the scraper bar on wood blocks about one inch (25 mm) high, with scraper bar level with surface. Loosen the two nuts holding each skid shoe and move the skid shoes up or down (figure 11). Tighten the nuts securely, with both skid shoes adjusted to same level and parallel to the surface.

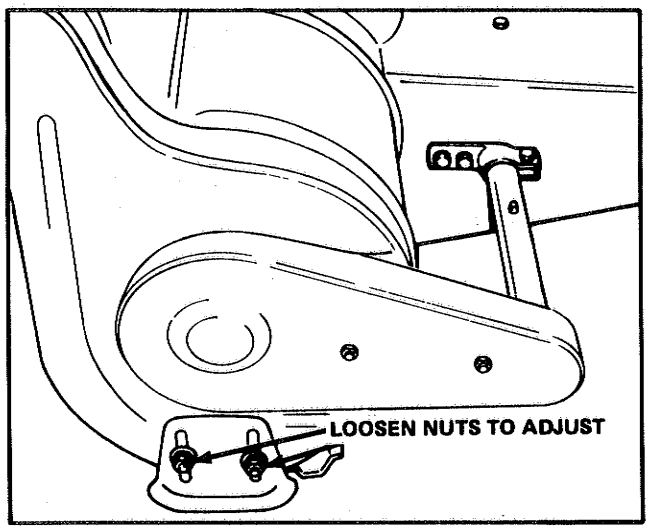


Figure 11. Skid Shoe Adjustment

DEFLECTOR ADJUSTMENT

The position of the deflector determines the height and distance snow will be thrown. Most snow throwing can be done with the deflector all the way up.

To adjust, loosen the two wing nuts and move the deflector up or down. Retighten the wing nuts.

LIFT ROD ADJUSTMENT

1. Fully raise the snow thrower. Measure the clearance between the scraper bar and the ground. The clearance should be about 3-1/2 to 4 inches (89 to 102 mm). If not, perform step 2.
2. Lower the snow thrower. Loosen the setscrew in the front set collar. Move the set collar back to increase clearance or forward to decrease clearance.

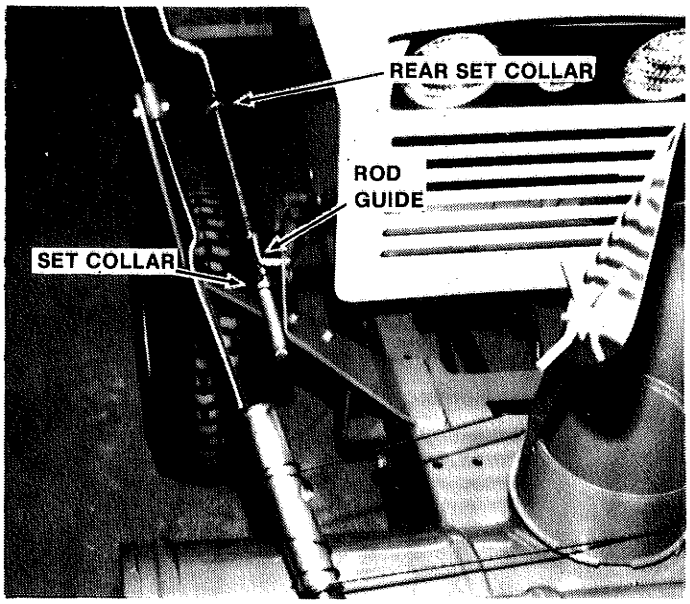


Figure 12. Lift Rod Adjustment

Assembly

SPOUT & CONTROL

1. Attach the support arm (figure 13) to the snow thrower frame with two 1 inch (25.4 mm) long capscrews and flange locknuts provided.

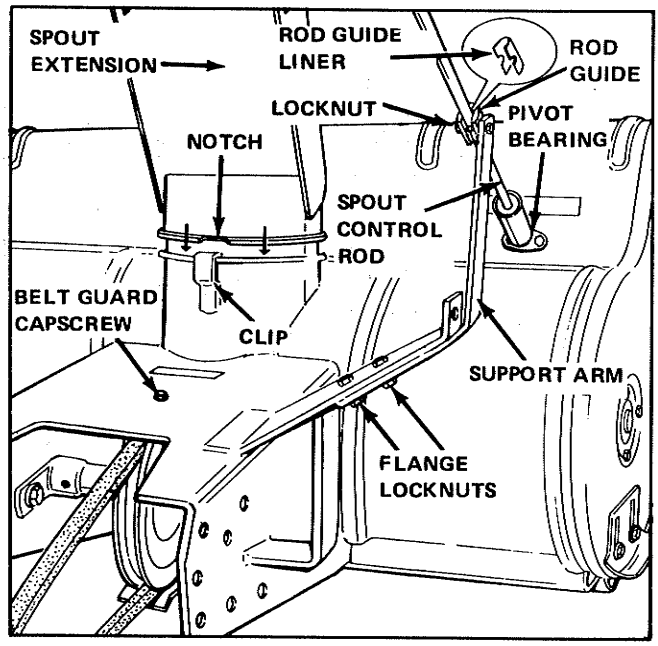


Figure 13. Spout & Control

2. Insert the end of the spout control rod through the plastic pivot bearing on the auger housing. Place a cotter pin in the lowest rod hole on the inside of the housing. Spread the cotter pin fully around the rod. Pull the rod back so the cotter pin is up against the bearing and insert another cotter pin through the rod just above the bearing. Spread the cotter pin fully around the rod.

NOTE

Do not let the bearing alone support the full weight of the rod, as the bearing can be damaged.

3. Place the thin plastic rod guide liner inside the rod guide. Place the rod guide over the spout control rod and attach the rod guide to the support arm with the 1-1/4 inch (31.4 mm) long capscrew and locknut provided. Install the locknut flush with the end of the capscrew.

4. Install the spout extension on the thrower housing so the clip is positioned in the notch on the spout extension. Oil the spout extension so it turns freely.

5. With the spout extension facing slightly left, wind the cable around the control rod spool as shown in figure 14. Wind three turns on the rear part of the spool so that the cable leaves the spool on the lower edge as shown. Wind two turns on the front part of the spool so that the cable leaves the spool on the upper edge as shown.

6. Place the looped end of the cable over the stud on the spout extension (see figure 14). Place the small flat washer provided on the stud. Pull the other end of the cable around the stud as shown with a pliers. While holding the cable tight, install the cup washer (facing inward), lockwasher and nut to hold the cable. Tape any loose cable neatly to the taut cable.

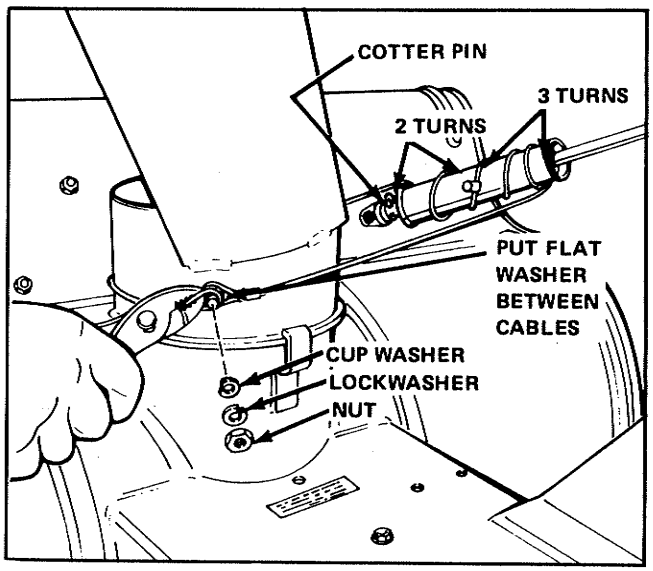


Figure 14. Spout Control Cable

7. Attach the deflector to the spout extension, using the two carriage bolts, special hex lockwashers, flat washers, and wing nuts provided (see figure 15).

NOTE

The points of the special hex lockwashers should face in toward the deflector.

Specifications

CONTROLS

Auger Drive: PTO Lever on left footrest
Raise & Lower: Tractor lift lever
Spout Rotation: Tee handle to right of operator

DRIVE TRAIN

Input Drive: Cushioning V-Belt
Final Drive: Prelubricated enclosed roller chain
Clutch: Tensioning V- Belt with brake

AUGER HOUSING

Bearings: Self-aligning rolling contact
Housing: Welded steel
Scraper Bar: Full width high carbon steel - replaceable

DIMENSIONS	36 INCH	42 INCH
Effective Width:	36" (914 mm)	42"(1067 mm)
Overall Width:	37-1/2" (953 mm)	43-1/2" (1105 mm)
Overall Length:	27" (686 mm)	27" (686 mm)
Overall Height:	19-1/2" (495 mm)	19-1/2" (495 mm)
Auger Diameter:	12" (305 mm)	12" (305 mm)
Net Weight:	128 lbs.	138 lbs.

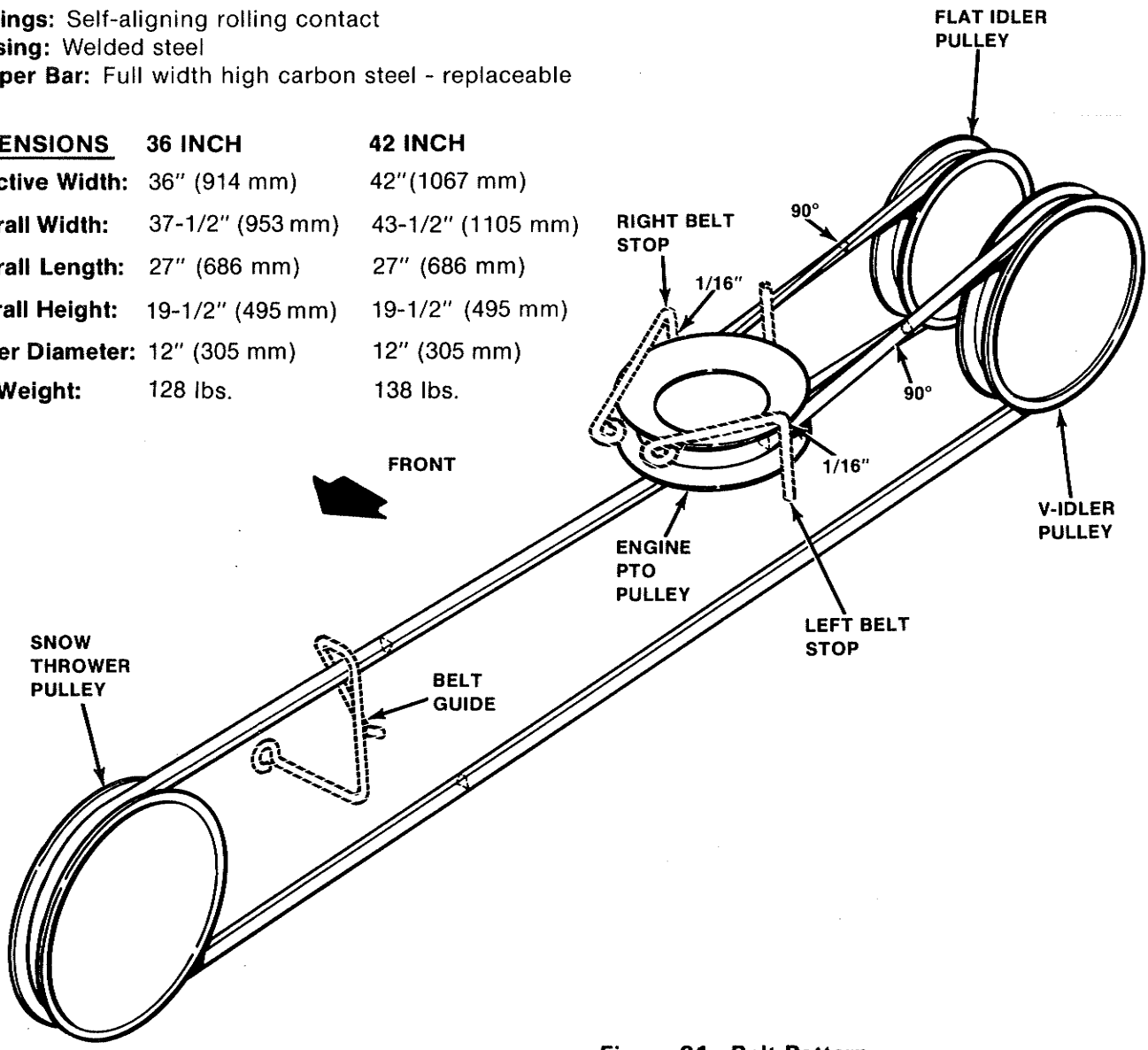


Figure 21. Belt Pattern